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Goddard Space Flight Center

Inside Wallops

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Smoke In The Atmosphere Inhibits Rainfall

For the first time, researchers have proven that smoke from forest fires inhibits rainfall. The findings are based on an extensive analysis of data taken from NASA's Tropical Rainfall Measuring Mission (TRMM) spacecraft.

The study shows that the "warm rain" processes that often create rain in tropical clouds are practically shut off when the clouds are polluted with heavy smoke from forest fires. In these clouds, scientists found, the cloud tops must grow considerably above the freezing level (16,000 feet) in order for them to start producing rain by an alternative mechanism.

"We've seen evidence of decreased precipitation in clouds contaminated by smoke, but it wasn't until now that we had direct evidence showing that smoke actually suppresses precipitation completely from certain clouds," said Dr. Daniel Rosenfeld, a TRMM scientist at the Institute of Earth Sciences, Hebrew University of Jerusalem.

Scientists have a keen interest in how changes in global precipitation affect human activities, such as crop production and the global rainfall weather pattern. More precise information about rainfall and its variability is crucial to understanding the global climate and predicting climate change.

During the satellite's overpass of Kalimantan, Indonesia on March 1, 1998, the southeastern portion of the island was engulfed in smoke, while the northwestern portion was relatively smoke free. The spacecraft's radar detected precipitation in smoke-free clouds, but almost none in the smoke-plagued clouds, showing the impact of smoke from fires on precipitation over the rainforest.

"It's important to note that this is not a unique case," said Rosenfeld. "We observed and documented several other cases that showed similar behavior. In some instances even less severe smoke concentration was found to have comparable impacts on clouds."

"Findings such as these are making the first inroads into the difficult problem of understanding humanity's impacts on global precipitation," said Dr. Christian Kummerow, TRMM project scientist at Goddard Space Flight Center.

Raindrops in the atmosphere grow by two means. In the first, called the "warm rain" process, a few cloud drops get large enough to start falling. As they fall, they pick up other cloud drops until they become big enough to fall to Earth as raindrops.

The second process requires ice particles and water colder than 32° Fahrenheit. Ice particles surrounded by this "super-cooled" water may grow extremely rapidly as water freezes onto the ice core. As these large ice particles fall, they melt and become raindrops.

Scientists have known for some time that smoke from burning vegetation suppresses rainfall but did not know to what extent until now. Thanks to TRMM observations, scientists are able to see both precipitation and cloud droplets over large areas, including clouds in and out of smoke plumes.

TRMM has produced continuous data since December 1997 and is a U.S.-Japanese mission and part of NASA's Earth Science Enterprise. Information and images from the TRMM mission are available on the Internet at URL: http://trmm.gsfc.nasa.gov/

A Message From The Administrator

On Wednesday, Oct. 20, President Clinton signed the appropriation bill which includes NASA's funding for FY 2000. The bill is an investment toward a stronger and more vital America in the 21st century. The bill includes $13.653B for NASA, an additional $74.3M over the President's request.

Three months ago, NASA's budget potentially faced more than a $1 billion reduction. With the signing of the bill, we can breathe a collective sigh of relief. It was because all of our voices were heard that the Congress responded. You, our contractors, space advocacy groups, students, teachers and citizens who cared about NASA shared your concerns with your elected representatives. The Congress and the President recognize that the work you do will help open the space frontier, develop new technologies, strengthen our economy and enrich lives in the new century.

I am proud to be a part of the NASA team. As we enter the new millennium, we will continue to make the American public proud of their space program.

Dan Goldin

Goddard Selects Contractor Excellence Award Winners

NASA Goddard Space Flight Center has selected two winners for the 1999 Goddard Contractor Excellence Award. The winners are Raytheon Information Technology & Scientific Services, Lanham, Md. and AppNet, Century Computing Division, Laurel, Md.

"The Contractor Excellence Award provides us with an opportunity to recognize those contractors who make a substantial contribution to the mission of Goddard and who are committed to the philosophy of continuous improvement as evidenced by their business practices," said Judy Bruner, the chair of the award evaluation committee.

To be considered for the award, applicants are asked to provide evidence of contract performance and customer satisfaction, meeting schedules, controlling costs, quality and productivity improvements, management commitment to continuous improvement, human resource utilization and strategic planning and long term research and development.

The winners of this year's award were chosen because of their outstanding continuous improvement efforts and contributions to Goddard's mission.

The two winners of the Goddard award will automatically be sent to compete for the George M. Low Award, which is NASA's Quality and Excellence Award. In addition, four other Goddard Contractor Excellence Award applicants will be forwarded for consideration for the NASA Agency prestigious award. The companies are CSC, System Sciences Division, Lanham-Seabrook, Md.; Bristol Aerospace Limited, Winnipeg, Manitoba, Canada; Jackson & Tull, Seabrook, Md. and Swales Aerospace, Beltsville, Md.

Other finalists for the Goddard award are Ball Aerospace & Technologies Corporation, Boulder, Colo.; H&H Consolidated, Inc., Wallops Island, Va.; Science Systems & Applications, Inc, Lanham; and TRW, Space & Electronics Group, Redondo Beach, Calif.

Daylight Saving Time Ends
2 a.m. Oct. 31
Set clocks back one hour!

FEHB Open Season

A Federal Employees Health Benefits (FEHB) open season will be held from Nov. 8 through Dec. 13. During this time, any eligible employee who is not registered may enroll and eligible employees may change from one plan or option to another, from self only to self and family or make a combination of these changes.

Enrollees who wish to continue their current enrollment do not need to take any action. Enrollees whose plans will not be participating in the program in 2000 or whose plans dropped an enrollment area having a separate enrollment code must enroll in a different plan to continue FEHB coverage in 2000.

Prior to open season your current health plan should send you a copy of its brochure including a notice of its 2000 rates. Be sure to review the material carefully to see if there are any changes in the plan's service and enrollment areas requiring action on your part. For an overview and explanation of the FEHB program, options and related topics visit the OPM FEHB home page: *www.opm.gov/insure/index.html*

New enrollments and changes in current enrollments elected during open season will become effective Jan. 2, 2000.

BEST Workshop Held at Wallops

Wallops Teacher-on-Loan, Tony Goodyear (top photo), helps students with bottle rocket launches during a workshop, Oct. 20 and 21, for students and teachers from Orchard Elementary School in Cleveland, OH. and Beers Elementary School in Washington, D.C.

The group also toured the aircraft hanger, the machine shop and SEM lab, participated in the simulation of a Pegasus launch in the control center, launched a weather balloon and had a space suit demonstration at the Visitor Center.

Oktoberfest '99

During this year's Oktoberfest some folks played, some danced, some blew away the day while others just sat and watched. Sunshine and a cool breeze made for a perfect day.

Safety Videos

For employees who missed the safety training video's shown during the recent In-Service Safety Day at Wallops, we will be re-showing these videos on Wallops TV Channel 6 on Oct. 28 and Nov. 4 beginning at 9 a.m.

Videos with approximate length of viewing time:
Hazard Communication - 12 minutes 30 seconds
NASA Safety Reporting System - 6 minutes 20 seconds
Lockout/Tagout - 6 minutes 25 seconds
GSFC Safety - 21 minutes

Direct questions to Aric Justice, x1121.

Sincere sympathy is extended to the family and friends of Billy C. Whealton who died Oct. 16. Whealton retired in 1995 as a security specialist.

Mail Can Be Delivered Faster

Most offices of the U.S. Postal Service sort mail using electronic scanners. To get the best possible delivery service capitalize everything in the address, use current two letter state abbreviation, eliminate all punctuation and most importantly use the correct zip code.

Happy Halloween

Semi-Annual Navy Family Housing Yard Sale

October 30
(rain or shine)

7:30 a.m. -- 1:30 p.m.

Blades Circle & Skeeter Lane

Essentials of Biology

When: Nov. 1 and 2
Time: 8:30 a.m. to 4:30 p.m.
Where: Bldg. 3, Greenbelt

The NASA Essentials of Biology Course was developed by life science educators at Colorado State University at the request of Administrator Goldin.

The presentations are designed for NASA civil servants with little or no background in the area, however, they also illustrate cutting edge technology for those with special interest or expertise. No training request is required, a sign-up sheet will be provided at each session. Questions can be directed to Kathy Fontaine, x66-5247.

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